

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re CONTINUATION APPLICATION of:

DEDERN *et al.*

Group Art Unit: 1712

Application No.: TBA

Examiner: D. Metzmaier

Filed: May 29, 2001

Title: EMULSIFICATION SYSTEMS AND EMULSIONS

* * * * *

May 29, 2001

(May 28 = Federal Holiday)

(May 27 = Sunday)

PRELIMINARY AMENDMENT

Hon. Commissioner of Patents
Washington, D.C. 20231

Sir:

Prior to examination on the merits, please amend the above-mentioned application in the manner set forth below.

IN THE SPECIFICATION:

Please amend the specification as set forth below.

Page 1, after the title, please add the following paragraph:

This application is a continuation of U.S. Application No. 09/452,144, which was filed on December 1, 1999. This application claims the benefit of U.S. Provisional Patent Application No. 60/111,440, which was filed on December 8, 1998. This application also claims the benefit of priority of Great Britain Patent Application No. 9826699.2, filed on December 5, 1998.

IN THE CLAIMS:

Please amend the claims as set forth below.

1. (Amended) A personal care or cosmetic oil-in-water emulsion comprising: at least one oil; water; and an emulsifier stabilizer system composed of an emulsifier for the oil and a polysaccharide combination of a Xanthan polysaccharide and a polyglucomannan polysaccharide.
2. (Amended) The emulsion as claimed in claim 1, wherein the polyglucomannan polysaccharide comprises random glucose/mannose backbone at a molar ratio of glucose to mannose of from 1:1.5 to 1:3.
3. (Amended) The emulsion as claimed in claim 1, wherein the polyglucomannan polysaccharide is a polyglucomannan derived from Konjak.
4. (Amended) The emulsion as claimed in claim 1, wherein the weight ratio of Xanthan to polyglucomannan is from 1:10 to 10:1.
5. (Amended) The emulsion as claimed in claim 1, wherein the polysaccharide combination of a Xanthan polysaccharide and a polyglucomannan polysaccharide is present from 0.02 to 0.5% by weight of the emulsion.
6. (Amended) The emulsion as claimed in claim 1, wherein the emulsifier comprises one or more non-ionic emulsifier(s) selected from the group consisting of alkoxylate emulsifiers, fatty acid esters, ethers, hemi-acetals or acetals of polyhydroxylic compounds, and a fatty acid amide which is N-substituted with the residue of a polyhydroxylic compound.
7. (Amended) The emulsion as claimed in claim 6, wherein the emulsifier comprises one or more alcohol alkoxylates.

8. (Amended) The emulsion as claimed in claim 6, wherein the emulsifier comprises one or more saccharide esters of fatty acids and a sugar, wherein the mono-ester content is at least 60%.
9. (Amended) The emulsion as claimed in claim 1, wherein the amount of emulsifier is from 0.02 to 1.5% by weight of the emulsion.
10. (Amended) The emulsion as claimed in claim 9, wherein the emulsifier comprises at least one alkoxyate emulsifier with an average of from 10 to 100 alkylene oxide residues and having an HLB greater than 12 and the amount of emulsifier used is from 0.04 to 0.1% by weight of the emulsion.
11. (Amended) The emulsion as claimed in claim 1, wherein the emulsifier includes at least one hydrophilic non-ionic emulsifier having an HLB of at least 12 and at least one hydrophobic non-ionic emulsifier having an HLB of less than 8.
12. (Amended) The emulsion as claimed in claim 11, wherein the hydrophilic emulsifier comprises at least one of alkoxyate emulsifiers with an average of from 10 to 100 alkylene oxide residues; sugar mono-esters; polyglycerol mono-esters; hydrocarbyl polysaccharides; fatty acid glycerol esters where the fatty acid has 8 to 12 carbon atoms; and fatty acid N-sugar amides, and wherein the hydrophobic emulsifier comprises at least one of alkoxyate emulsifiers with an average of from 2 to about 10 alkylene oxide residues; glycerol esters where the fatty acid has 14 to 24 carbon atoms; and anhydrosaccharide fatty acids.
13. (Amended) The emulsion as claimed in claim 12, wherein the amount of the hydrophilic emulsifier is from 0.04 to 0.5% by weight of the emulsion and the amount of the hydrophobic emulsifier is from 0.1 to 1% by weight of the emulsion.
14. (Amended) The emulsion as claimed in claim 1, wherein the oil phase comprises an emollient oil.

15. (Amended) The emulsion as claimed in claim 14, wherein the emollient oil comprises at least one normally liquid emollient oil selected from the group consisting of mineral oils, paraffin oils, vegetable glyceride oils, animal glyceride oils, synthetic ester oils, synthetic ether oils, silicone oils, fatty alcohol propoxylates or a solid liquefiable emollient fat or wax, and mixtures thereof.
16. (Amended) The emulsion as claimed in claim 1, wherein the oil phase is at least 5% by weight of the emulsion.
17. (Amended) The emulsion as claimed in claim 1 in the form of a milk having a viscosity of from 100 to 10000 mPa.s.
18. (Amended) The emulsion as claimed in claim 1 in the form of a cream having a viscosity of from 30000 to 80000 mPa.s.
19. (Amended) The emulsion as claimed in claim 18 in the form of a cream which includes as a thickener one or more fatty amphiphiles and/or one or more polymeric thickeners.
20. (Amended) The emulsion as claimed in claim 1 comprising:
from 1 to 80% by weight of at least one oil;
from 0.02 to 1.2% by weight of at least one alkoxide emulsifier having an HLB of at least 12;
optionally from 0.1 to 1.2% by weight of at least one emulsifier having an HLB of less than 8;
the total amount of emulsifier being from 0.02 to 1.5% by weight;
from 0.02 to 0.5% by weight of at least one polysaccharide stabilizer;
optionally from 0.1 to 10% by weight of at least one thickener;
the remainder being minor components and additives and water.
21. (Amended) The emulsion as claimed in claim 1 comprising:
from 1 to 80% by weight of at least one oil;

from 0.02 to 1.2% by weight of at least one emulsifier having an HLB of at least 12 selected from the group consisting of a fatty acid ester, ether, hemi-acetal or acetal of a polyhydroxylic compound, and a fatty acid amide which is N-substituted with the residue of a polyhydroxylic compound;

optionally from 0.1 to 1.2% by weight of at least one emulsifier having an HLB of less than 8;

the total amount of emulsifier being from 0.02 to 1.5% by weight;

from 0.02 to 0.5% by weight of at least one polysaccharide stabilizer;

optionally from 0.1 to 10% by weight of at least one thickener;

the remainder being minor components and additives and water.

22. (Amended) The emulsion as claimed in claim 1 having a pH of from 4 to 9.
23. (Amended) The emulsion as claimed in claim 1 comprising one or more of: preservatives; perfumes; humectants or solvents; sunfilter or sunscreen materials; alpha hydroxy acids; self-tanning agents; antimicrobial components; Vitamins and their precursors; skin care agents; phospholipids; vesicle-containing formulations; germanium-containing compounds; botanical extracts; skin whiteners; skin repair compounds; caffeine; cooling additives; insect repellents; essential oils; and pigments.
24. (Amended) A method of making an emulsion as claimed in claim 1 by direct emulsification, wherein the emulsifier(s) and polysaccharide stabilizer are incorporated into the aqueous phase, optionally including thickener components in the aqueous phase, and then mixing the oil into the aqueous continuous phase to emulsify it.
25. (Amended) The method as claimed in claim 24, wherein the polysaccharide stabilizer in the aqueous phase is heated to above about 60°C and is optionally subjected to high intensity mixing.
26. (Amended) The method of making an emulsion as claimed in claim 1 by inverse emulsification, wherein the emulsifier(s) and polysaccharide stabilizer are incorporated

into the oil phase and the aqueous phase is then mixed into the oil phase until the system inverts to form an oil-in-water emulsion.

27. (Amended) The method as claimed in claim 26, wherein the polysaccharide stabilizer in contact with the aqueous phase is heated to above about 60°C, and is optionally subjected to high intensity mixing.
28. (Amended) A dry blend emulsifier stabilizer formulation comprising an oil emulsifier and an oil-in-water emulsion stabilizer which is a polysaccharide combination of a Xanthan polysaccharide and a polyglucomannan polysaccharide.
29. (Amended) The formulation as claimed in claim 28 further comprising a sugar.
30. (Amended) The dry blend as claimed in claim 29 comprising;
from 2 to 10 parts by weight of Xanthan;
from 2 to 10 parts by weight of polyglucomannan;
the weight ratio of Xanthan to polyglucomannan being from 1:4 to 4:1;
optionally from 5 to 40 parts by weight of an emulsifier having an HLB of less than 8; and
optionally from 2 to 10 parts by weight of milling aid (sugar).
31. (Amended) The dry blend claimed in claim 28 having a mean particle size of from about 100 to about 500µm.
32. (Amended) The dry blend as claimed in claim 31, wherein the proportion of particles of size lower than 50µm is less than 2% by weight.

Please cancel claim 33 without prejudice or disclaimer.

Please add new claims 34-43 as follows:

34. (New) A personal care or cosmetic milk or lotion comprising an oil-in-water emulsion having a viscosity of up to about 10,000 mPa.s, wherein said emulsion comprises an emulsifier stabilizer system composed of an emulsifier for the oil and a

polysaccharide combination of a Xanthan polysaccharide and a polyglucomannan polysaccharide.

35. (New) A personal care or cosmetic oil-in-water emulsion cream comprising additional thickener components and having a viscosity of up to about 20,000 mPa.s, wherein said emulsion comprises an emulsifier stabilizer system composed of an emulsifier for the oil and a polysaccharide combination of a Xanthan polysaccharide and a polyglucomannan polysaccharide.
36. (New) A personal care or cosmetic oil-in-water emulsion comprising an emulsifier stabilizer system composed of an emulsifier for the oil and a polysaccharide combination of a Xanthan polysaccharide and a polyglucomannan polysaccharide, wherein the concentration of ionic materials is not greater than about 0.05 molar.
37. (New) The emulsion as claimed in claim 4, wherein the weight ratio of Xanthan to polyglucomannan is from 2:1 to 1:2.
38. (New) The emulsion as claimed in claim 1, wherein the polysaccharide combination of a Xanthan polysaccharide and a polyglucomannan polysaccharide is present from 0.025 to 0.15% by weight of the emulsion.
39. (New) The emulsion as claimed in claim 6, wherein the emulsifier comprises one or more alkoxylate emulsifiers derived from fatty acid esters.
40. (New) The emulsion as claimed in claim 6, wherein the emulsifier comprises one or more fatty acid amides which are N-substituted with the residue of a polyhydroxylic saccharide fatty acid ester.
41. (New) The emulsion as claimed in claim 7, wherein the emulsifier comprises one or more alcohol ethoxylates.

42. (New) The emulsion as claimed in claim 8, wherein the emulsion comprises one or more sugars selected from the group consisting of sucrose, fructose and glucose.
43. (New) An emulsion as claimed in claim 1, wherein the amount of emulsifier is from 0.1 to 1.5% by weight of the emulsion.

REMARKS

Upon entry of this Amendment, claims 1-32 and 34-43 will be pending of which claims 1, 28 and 34-36 are independent. The claims have been amended to further specify Applicants' invention. Support for the above amendments can be found throughout the application as filed, and it is respectfully submitted that no new matter has been introduced. Entry of this Preliminary Amendment is respectfully requested.

It is respectfully submitted that the present application is in condition for allowance and a Notice to that effect is courteously solicited. If any questions remain, the Examiner is encouraged to call the undersigned attorney to expedite the prosecution of this application.

Respectfully submitted,

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APPENDIX

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE SPECIFICATION:

The specification is changed as follows:

Page 1, after the title:

This application is a continuation of U.S. Application No. 09/452,144, which was filed on December 1, 1999. This application claims the benefit of U.S. Provisional Patent Application No. 60/111,440, which was filed on December 8, 1998. This application also claims the benefit of priority of Great Britain Patent Application No. 9826699.2, filed on December 5, 1998.

IN THE CLAIMS:

The claims are amended as follows:

1. (Amended) A personal care or cosmetic oil-in-water emulsion [which includes as] comprising: at least one oil; water; and an emulsifier [stabiliser] stabilizer system[.] composed of an emulsifier for the oil and a polysaccharide combination of a Xanthan polysaccharide and a polyglucomannan polysaccharide.
2. (Amended) [An] The emulsion as claimed in claim 1, wherein the polyglucomannan polysaccharide [has a] comprises random glucose/mannose backbone at a molar ratio of glucose to mannose of from 1:1.5 to 1:3.
3. (Amended) [An] The emulsion as claimed in [either] claim 1 [or claim 2], wherein the polyglucomannan polysaccharide is a polyglucomannan derived from Konjak.

4. (Amended) [An] The emulsion as claimed in [any one of claims 1 to 3 in which] claim 1, wherein the weight ratio of Xanthan to polyglucomannan is from 1:10 to 10:1[, particularly 2:1 to 1:2].
5. (Amended) [An] The emulsion as claimed in [any one of claims 1 to 4 in which] claim 1, wherein the polysaccharide combination of a Xanthan polysaccharide and a polyglucomannan polysaccharide is present [as] from 0.02 to 0.5%[, particularly from 0.025 to 0.15%,] by weight of the emulsion.
6. (Amended) [An] The emulsion as claimed in [any one of claims 1 to 4] claim 1, wherein the emulsifier [is or includes] comprises one or more non-ionic emulsifier(s) selected from the group consisting of [:
- 1] alkoxyate emulsifiers, fatty acid esters, [particularly derived from fatty acid esters,] ethers, hemi-acetals or acetals of polyhydroxylic compounds, and [or] a fatty acid amide which is N-substituted with the residue of a polyhydroxylic compound.];
 - 2 fatty acid esters, ethers, hemi-acetals or acetals of polyhydroxylic compounds, or a fatty acid amide which is N-substituted with the residue of a polyhydroxylic compound, particularly a saccharide fatty acid ester.]
7. (Amended) [An] The emulsion as claimed in claim 6, wherein the emulsifier [is or includes] comprises one or more alcohol alkoxyates[, particularly ethoxyates].
8. (Amended) [An] The emulsion as claimed in claim 6, wherein the emulsifier [is or includes] comprises one or more saccharide esters of fatty acids and a sugar,[particularly sucrose, fructose and/or glucose, in which] wherein the mono-ester content is at least 60%.
9. (Amended) [An] The emulsion as claimed in [any one of claims 1 to 8 in which] claim 1, wherein the amount of emulsifier is from 0.02 to 1.5%[, particularly from 0.1 to 1.5%,] by weight of the emulsion.

10. (Amended) [An] The emulsion as claimed in claim 9, wherein the emulsifier [is or includes] comprises at least one alkoxyate emulsifier with an average of from 10 to 100 alkylene oxide residues and having an HLB greater than 12 and the amount of emulsifier used is from 0.04 to 0.1% by weight of the emulsion.
11. (Amended) [An] The emulsion as claimed in [any one of claims 1 to 10 in which] claim 1, wherein the emulsifier includes at least one hydrophilic non-ionic emulsifier having an HLB of at least 12 and at least one hydrophobic non-ionic emulsifier having an HLB of less than 8.
12. (Amended) [An] The emulsion as claimed in claim 11, wherein the hydrophilic emulsifier [is or includes] comprises at least one of alkoxyate emulsifiers with an average of from 10 to 100 alkylene oxide residues; sugar mono-esters; polyglycerol mono-esters; hydrocarbyl polysaccharides; fatty acid glycerol esters where the fatty acid has 8 to 12 carbon atoms; and fatty acid N-sugar amides [such as glucamides], and wherein the hydrophobic emulsifier [is or includes] comprises at least one of alkoxyate emulsifiers with an average of from 2 to about 10 alkylene oxide residues; glycerol esters where the fatty acid has 14 to 24 carbon atoms; and anhydrosaccharide fatty acids.
13. (Amended) [An] The emulsion as claimed in [either claim 11 or] claim 12 [in which] wherein the amount of the hydrophilic emulsifier is from 0.04 to 0.5% by weight of the emulsion and the amount of the hydrophobic emulsifier is from 0.1 to 1% by weight of the emulsion.
14. (Amended) [An] The emulsion as claimed in [any one of claims 1 to 13 in which] claim 1, wherein the oil phase [is or includes] comprises an emollient oil.
15. (Amended) [An] The emulsion as claimed in claim 14, wherein the emollient oil [is or includes] comprises at least one normally liquid emollient oil selected from the group consisting of mineral oils, paraffin oils, vegetable glyceride oils, animal glyceride oils, synthetic ester oils, synthetic ether oils, silicone oils, fatty alcohol propoxylates or a

solid liquefiable emollient fat or wax, [or a mixture of such emollients] and mixtures thereof.

16. (Amended) [An] The emulsion as claimed in [any one of claims 1 to 15 in which] claim 1, wherein the oil phase is at least 5% by weight of the emulsion.
17. (Amended) [An] The emulsion as claimed in [any one of claims 1 to 16] claim 1 in the form of a milk having a [low shear] viscosity of from 100 to 10000 mPa.s.
18. (Amended) [An] The emulsion as claimed in [any one of claims 1 to 17] claim 1 in the form of a cream having a [low shear] viscosity of from 30000 to 80000 mPa.s.
19. (Amended) [An] The emulsion as claimed in claim 18 in the form of a cream which includes as a thickener one or more fatty amphiphiles and/or one or more polymeric thickeners.
20. (Amended) [An] The emulsion as claimed in [any one of claims 1 to 19 which includes] claim 1 comprising:
from 1 to 80% by weight of at least one oil;
from 0.02 to 1.2% by weight of at least one alkoxide emulsifier having an HLB of at least 12;
optionally from 0.1 to 1.2% by weight of at least one emulsifier having an HLB of less than 8;
the total amount of emulsifier being from 0.02 to 1.5% by weight;
from 0.02 to 0.5% by weight of at least one polysaccharide [stabiliser] stabilizer;
optionally from 0.1 to 10% by weight of at least one thickener;
the remainder being minor components and additives and water.
21. (Amended) [An] The emulsion as claimed in [any one of claims 1 to 19 which includes] claim 1 comprising:
from 1 to 80% by weight of at least one oil;

from 0.02 to 1.2% by weight of at least one emulsifier having an HLB of at least 12[,]
selected from the group consisting of a [which is at least one] fatty acid ester, ether,
hemi-acetal or acetal of a polyhydroxylic compound, [or] and a fatty acid amide which
is N-substituted with the residue of a polyhydroxylic compound;

optionally from 0.1 to 1.2% by weight of at least one emulsifier having an HLB of less
than 8;

the total amount of emulsifier being from 0.02 to 1.5% by weight;
from 0.02 to 0.5% by weight of at least one polysaccharide [stabiliser] stabilizer;
optionally from 0.1 to 10% by weight of at least one thickener;
the remainder being minor components and additives and water.

22. (Amended) [An] The emulsion as claimed in [any one of claims 1 to 21 which has]
claim 1 having a pH of from 4 to 9.

23. (Amended) [An] The emulsion as claimed in [any one of claims 1 to 22 which
additionally includes] claim 1 comprising one or more of: preservatives; perfumes;
humectants or solvents; sunfilter or sunscreen materials; alpha hydroxy acids; self-tanning
agents; antimicrobial components; Vitamins and their precursors; skin care agents;
phospholipids; vesicle-containing formulations; germanium-containing compounds;
botanical extracts; skin whiteners; skin repair compounds; caffeine; cooling additives;
insect repellents; essential oils; and pigments.

24. (Amended) A method of making an emulsion as claimed in [any one of claims 1 to
23] claim 1 by direct emulsification, [in which] wherein the emulsifier(s) and
polysaccharide [stabiliser] stabilizer are incorporated into the aqueous phase, optionally
including thickener components in the aqueous phase, and then mixing the oil into the
aqueous continuous phase to emulsify it.

25. (Amended) [A] The method as claimed in claim 24, [in which] wherein the
polysaccharide [stabiliser] stabilizer in the aqueous phase is heated to above about 60°C
and [or] is optionally subjected to high intensity mixing.

26. (Amended) [A] The method of making an emulsion as claimed in [any one of claims 1 to 25] claim 1 by inverse emulsification, [in which] wherein the emulsifier(s) and polysaccharide [stabiliser] stabilizer are incorporated into the oil phase and the aqueous phase is then mixed into the oil phase until the system inverts to form an oil-in-water emulsion.
27. (Amended) [A] The method as claimed in claim 26, [in which] wherein the polysaccharide [stabiliser] stabilizer in contact with the aqueous phase is heated to above about 60°C, [and/or] and is optionally subjected to high intensity mixing.
28. (Amended) A dry blend emulsifier [stabiliser] stabilizer formulation [which includes] comprising an oil emulsifier and an oil-in-water emulsion [stabiliser] stabilizer which is a polysaccharide combination of a Xanthan polysaccharide and a polyglucomannan polysaccharide.
29. (Amended) [A] The formulation as claimed in claim 28 [which further includes] further comprising a sugar.
30. (Amended) [A] The dry blend as claimed in [either] claim [28 or] 29 [which includes] comprising;
from 2 to 10 parts by weight of Xanthan;
from 2 to 10 parts by weight of polyglucomannan;
the weight ratio of Xanthan to polyglucomannan being from 1:4 to 4:1;
optionally from 5 to 40 parts by weight of an emulsifier having an HLB of less than 8; and
optionally from 2 to 10 parts by weight of milling aid (sugar).
31. (Amended) [A] The dry blend claimed in [any one of claims 28 to 30 which has] claim 28 having a mean particle size of from about 100 to about 500µm.
32. (Amended) [A] The dry blend as claimed in claim 31, wherein the proportion of particles of size lower than 50µm is less than 2% by weight.

Claim 33 has been canceled.